MEMORY CARD, ETC. JPEG PROCESSING UNIT 2ND DATA-ORDER TRANSFORMING UNIT DISTORTION CORRECTING RANGE CALCULATING UNIT DISTORTION CORRECTION PROCESSING UNIT IMAGE PROCESSING CIRCUIT 5 **FRAME MEMORY** 1ST DATA-ORDER TRANSFORMING UNIT SPU PRE-PROCESSING CIRCUIT CCD

FIG. 1

LATER-STAGE BLOCK CORRECTION PROCESSING UNIT INTERPOLATION CALCULATING UNIT -85 83 82 MEMORY CONTROL UNIT INNER MEMORY UNIT INTERPOLATION-COORDINATE GENERATING UNIT 813 SELECTOR CONTROL REGISTER -812 INTERPOLATION-POSITION GENERATING UNIT DISTORTION-CORRECTION COORDINATE TRANSFORMING UNIT 811 (X, Y) PREVIOUS-STAGE BLOCK

FIG.2

FIG.3

FIG.4

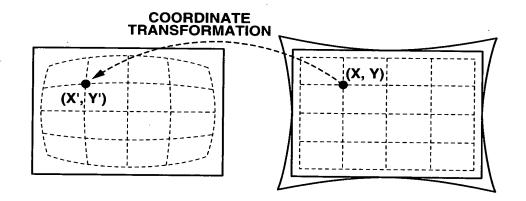


FIG.5

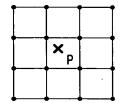


FIG.6

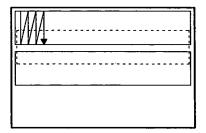


FIG.7

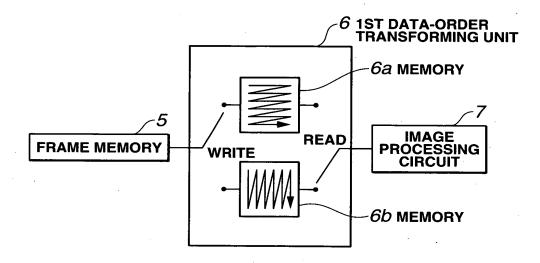


FIG.8

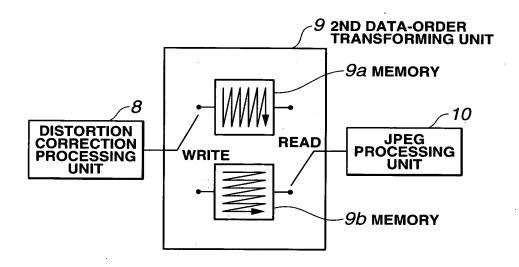


FIG.9

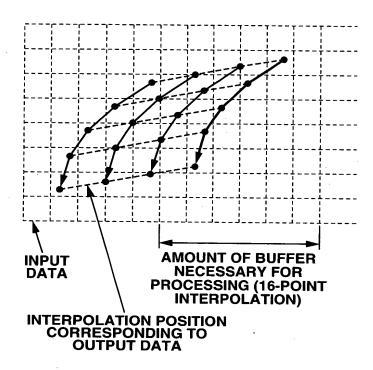


FIG.10

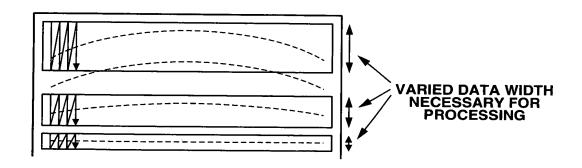


FIG.11

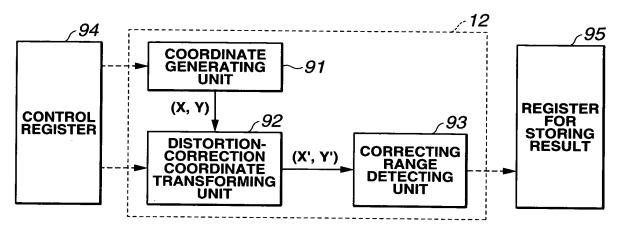


FIG.12

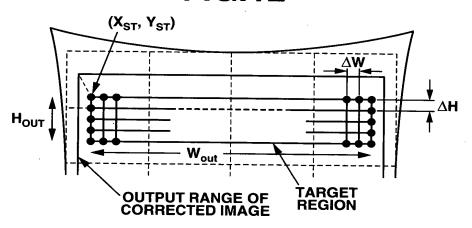


FIG.13

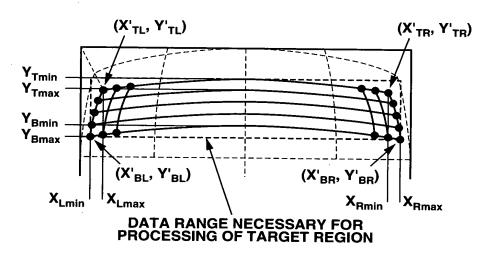


FIG.14

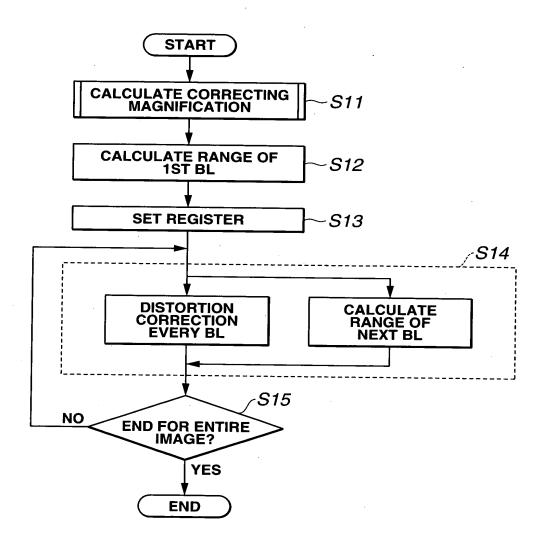
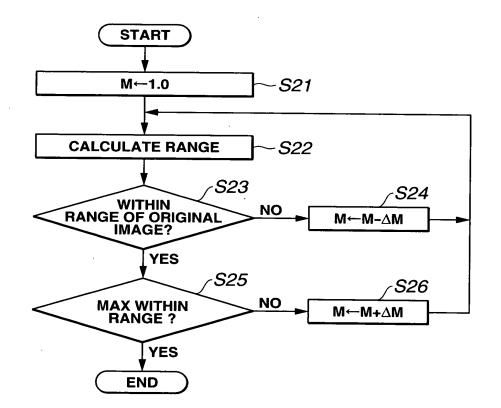


FIG.15



k

REGISTER FOR STORING RESULT CORRECTING
RANGE
DETECTING
UNIT -93 CORRECTING COORDINATE CALCULATING UNIT 925 924 MULTIPLIER CONTROL UNIT 2 MULTIPLIER 2 Ø ~923 925 MULTIPLIER CONTROL UNIT 1 CONTROL REGISTER MULTIPLIER ರ β -921 CALCULATING χ, 3 -91 COORDINATE GENERATING UNIT

FIG. 16

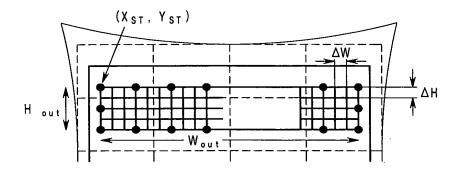
FIG.17

X , Y :	X, Y	l	ļ			 ! !		X, Y	
α:	[Z ²]	Z ⁴]	Z ⁶]	<u> </u>	Z ²
β:	[Z ²]	Z ²]	 ! !		<u> </u>	Z ²
γ:			Z ⁴	 	Z ⁶				
δ:		Α		В		С]	<u> </u>	Α
ε:			AZ ²	_ 	BZ ⁴		CZ ⁶]	
X', Y' :								X', Y'	
(CLK)	1	2	3	4	5	6	7	8	9

→ TIME

X, Y :	X, ≺	Χ, Υ	, X					! ! !		Χ, Υ	χ, Υ	, ×
 გ		\mathbf{Z}^2] Z ²	Z ₂	74	Z	Z ⁴	Σ _β	şΖ	SZ	\mathbf{Z}^2	Z ₂
β:		Z ²	Z ²	Z ₂	Z ²	Z ²	Z ²				Z ²	Z^2
 			7	Z	Z ⁴	Σę	Σ ₆	Z _e				7
δ:			4			6			ပ			
:: ::			AZ ²	AZ ²	AZ ²	BZ ⁴	BZ ⁴	BZ⁴	CZę	°Z2	ζZ	AZ ²
X', Y':										Χ', Υ	Χ, Υ.	,×
(CLK)	-	2	ဗ	4	5	9	7	8	6	10	11	12

FIG.19



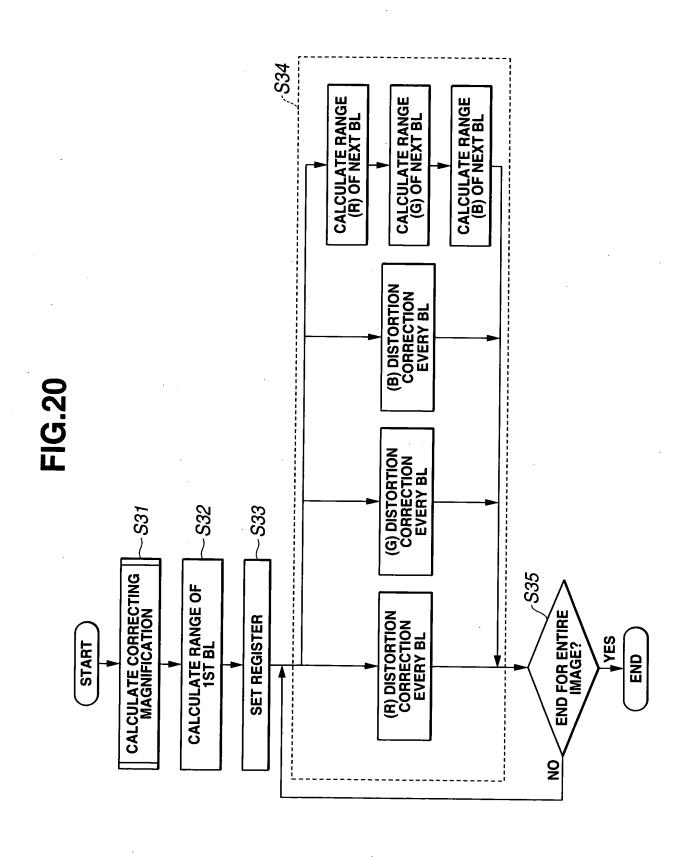


FIG.21

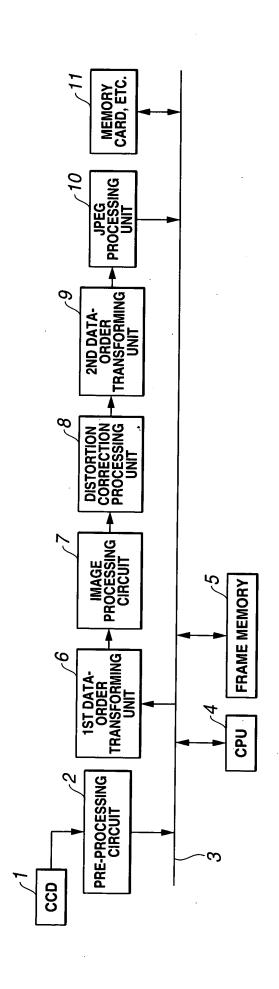


FIG.22

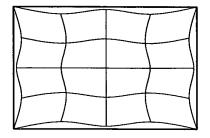


FIG.23

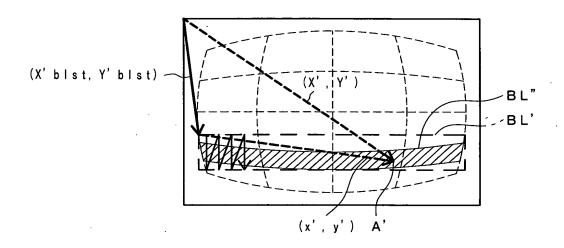


FIG.24

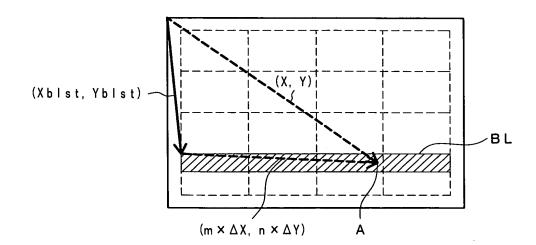
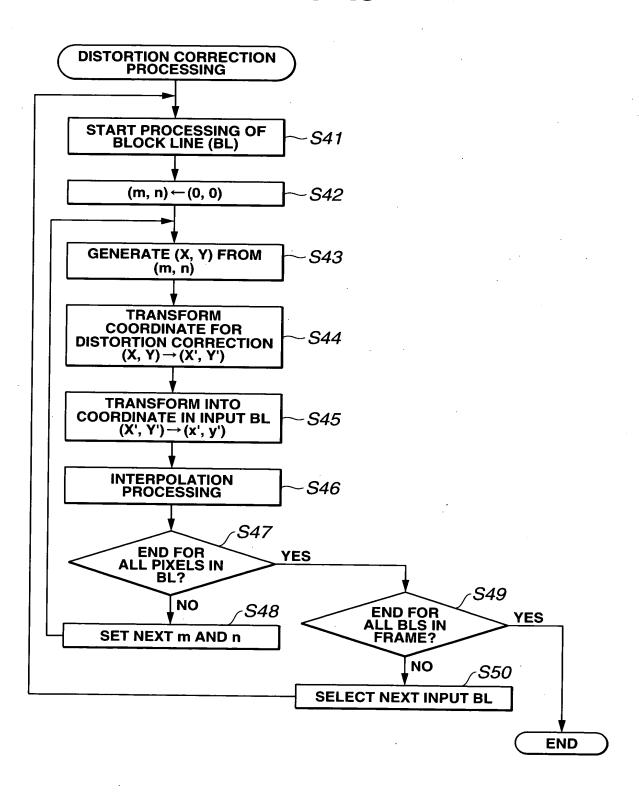
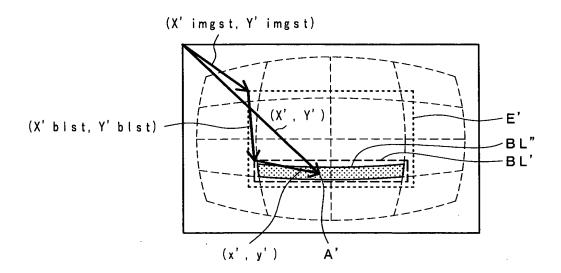


FIG.25





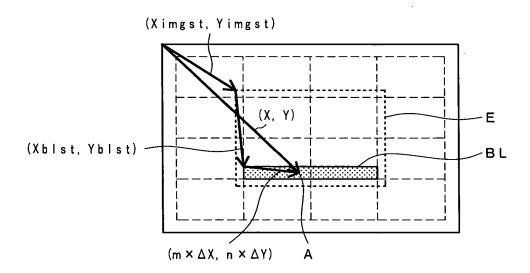
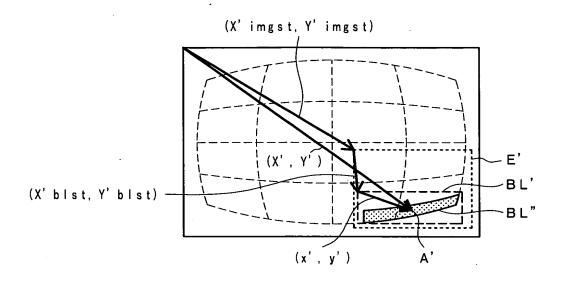


FIG.28



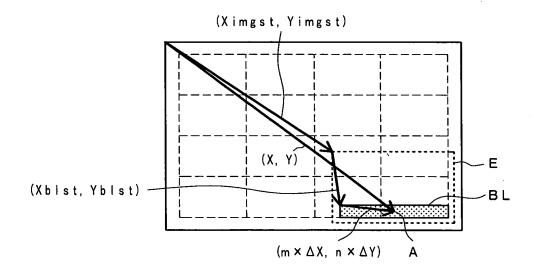


FIG.30

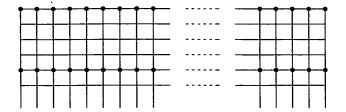


FIG.31

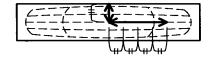


FIG.32

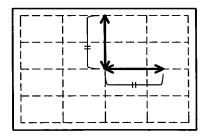


FIG.33

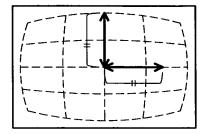


FIG.34

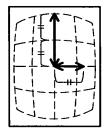


FIG.36

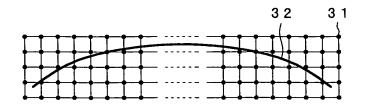
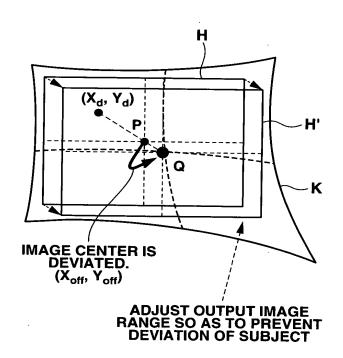
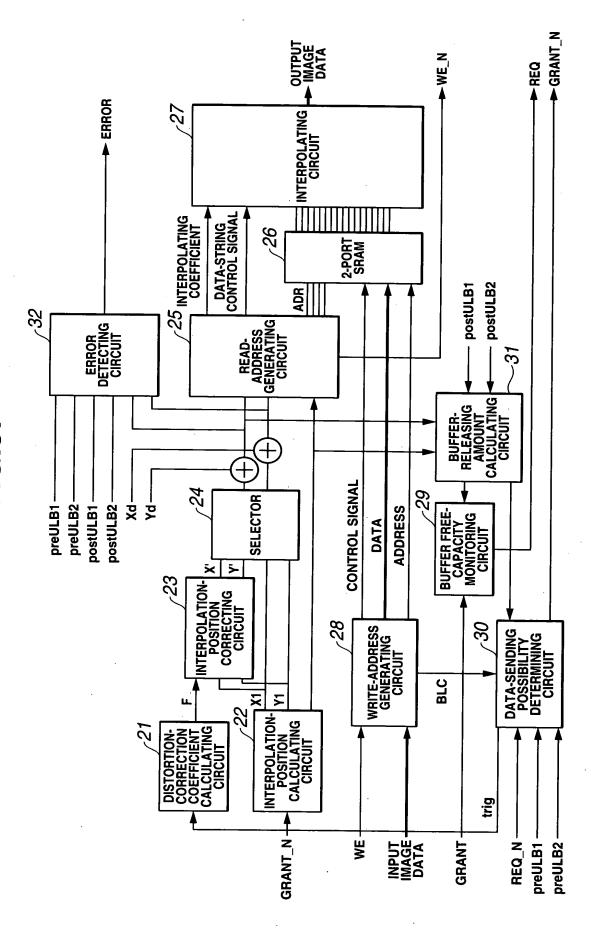


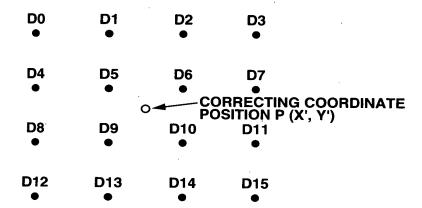
FIG.35





-1G.37

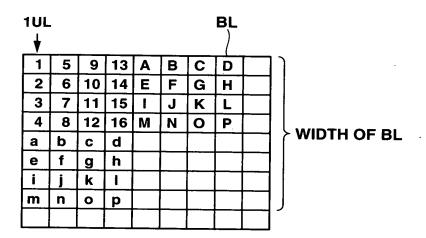
FIG.38

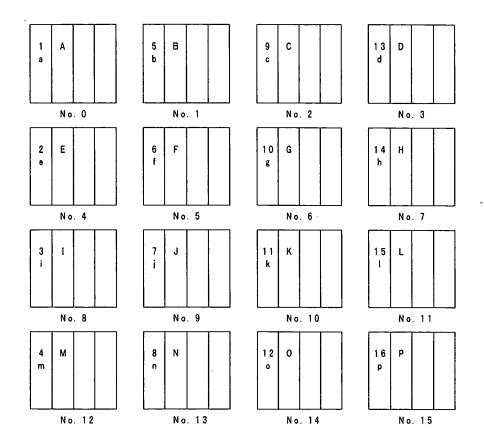


ORDER OF INPUT UL (N:INTEGER)

		_														-					
			N+4 \			+12		N+5			+13		۷+6 ا			+14		V,+7			+15
		4N	1	4N+	8 🗲	4	N+1	1.	4N+	9 ⋠	4	N+2	₹4	N+1	10 🖌	41	N+3	4	N+	11 🖌	
	0	0	0	0	0		0	0	0	0		0	0	0	0	1	0	0	0	Ó	
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			NO	. 0				No). 1				No	. 2				No	. 3		
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	23	۵		00	اما																
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			No	. 4				NO	. 5				No	. 6				No	. 7		
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	1	6 10		6 10	6 10		6 10	6	6	6			6	6	6		6	6	2 6	6	
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			No	. 8				No	. 9				No.	10				No.	11		
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		اردا								_											
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			No.	12				No.	13			ı	No.	14			1	No.	15		

FIG.40





ex. INTERPOLATION POSITION=(4N+10+ α_0 , 50+ α_1) (α_* : DECIMAL)

4N+4 4N+12 4N ↓4N+8↓	4N+5 4N+1 4N+1 4N+9 ✓	3 4N+6 4N+1 4N+2 √4N+10 √	4 4N+7 4N+15 4N+3 4N+11 1
 12 48 48 48 48 13 52 52 52 52 14 56 56 56 56	48 48 48 48 52 52 52 52 56 56 56 56	48 48 48 52 52 52 52 56 56 56	48 48 48 48 52 52 52 52 56 56 56 56
No. 0	No. 1	No. 2	No. 3
12 49 49 49 49 13 53 53 53 53 14 57 57 57 57	49 49 49 49 53 53 53 53 57 57 57 57	49 49 49 49 53 53 53 57 57 57	49 49 49 49 53 53 53 57 57 57
No. 4	No. 5	No. 6	No. 7
12 50 50 50 50 13 54 54 54 54 14 58 58 58 58	50 50 50 54 54 54 58 58 58 58	50 50 50 50 54 54 54 54 58 58 58 58	50 50 50 50 54 54 54 54 58 58 58 58
No. 8	No. 9	No. 10	No. 11
12 51 51 51 51 13 55 55 55 55 14 59 59 59 59	51 51 51 51 55 55 55 55 59 59 59 59	51 51 51 51 55 55 55 55 59 59 59 59	51 51 51 51 55 55 55 55 59 59 59 59
No. 12	No. 13	No. 14	No. 15

READ ADDRESS TO MEMORY

No. 5, 6, 7, 9, 10, 11, 13, 14, 15 : 60 (=24 * 2+12)

No. 4, 8, 12 : 84 (=24 * 3+12)

No. 1, 2, 3 : 61 (=24 * 2+13)

No. 0: 85 (=24 * 3+13)

FIG.43

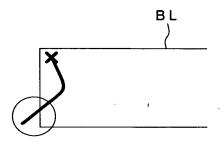


FIG.44

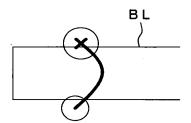


FIG.45

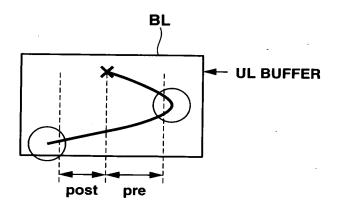


FIG.46

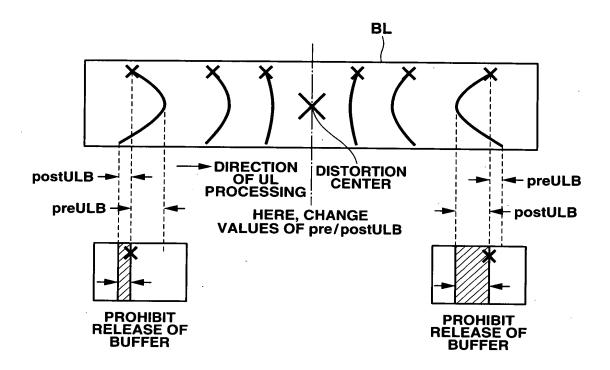


FIG.49

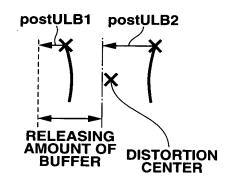


FIG.47

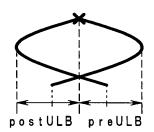


FIG.48

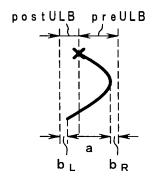


FIG.50

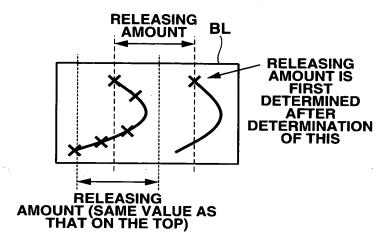


FIG.51

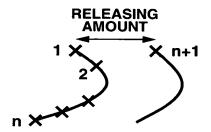
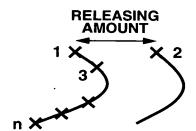


FIG.52

ÚL1 ÚL2 ÚL3 ÚL4	
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FREE PROCESSING



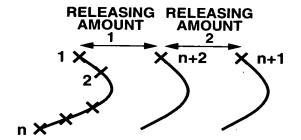




FIG.56

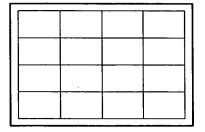


FIG.57

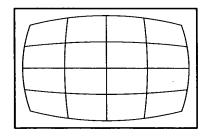


FIG.58

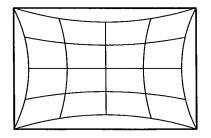


FIG.59

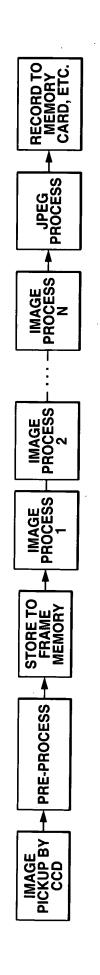


FIG.60

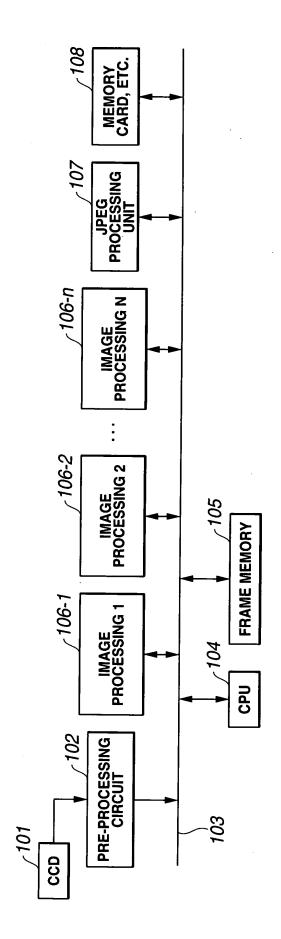


FIG.61

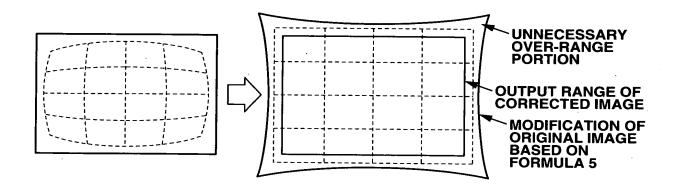


FIG.62

